

AMENDMENTS TO THE SPECIFICATION:

Please amend page 1, paragraph 4, to read as follows:

BACKGROUND OF THE INVENTION

Conventional apparatus, whether [fixed] stationary or mobile, for packing goods/products using stretch film typically comprise an assembly for unrolling or dispensing the film from a spool and [for] then pre-stretching [it] the same. The assembly feeds the film toward a bundle of goods/products to be wrapped/packed, which is the bundle usually being supported by a pallet. The spool is unrolled using rubber-covered rollers controlled either by electromagnetic brakes or clutches, or through [by] electronically operated motor reducers. The film then passes over a series of idle conveyance rollers before [it] leav[es]ing the assembly and arriv[es]ing at the bundle to be wrapped.

Please amend from after paragraph 4 on page 1 to before the first full paragraph on page 2 to read as follows:

~~In case of~~ With a stationary or fixed type apparatus installation, the [load] bundle, which is arranged on an appropriate platform, rotates [around] about its own axis. ~~In case of~~ With mobile [equipment] apparatus, on the other hand, it is the unrolling and pre-stretching assembly that causes rotat[es]ion about [around] the [load] bundle, which remains in a fixed position. ~~The~~ Rotation of the rubber-covered rollers is often controlled by varying the [supply] voltage supply, when electromagnetic brakes or clutches are used, or

the number of revolutions in the case of electronically operated motor reducers, holding [back] the stretch film back to a greater or lesser extent, and thus regulating its "stretch" as it is [being] fed. The elastic return ~~of the film~~ then assures [the] stability ~~of its~~ during the film's wrapping [around] about the [load] bundle.

Please amend page 2, first full paragraph, to read as follows:

~~The film is cut at~~ At the end of the wrapping cycle, the film is cut, either manually by the operator or ~~with the help of~~ using an automatic cutter[ing]er [means] arranged generally downstream of the [control] rollers. ~~In the latter case~~ When operating the cutter, an initial laceration ~~produced by the cutting means~~ is made so as to [evolve] develop transversely into a complete cut by locking the control rollers and then continuing [the] relative rotational movement between the assembly and the [load] bundle. In this manner, [T]he terminal or end flap of film, which is left upon laceration, generated in this manner remains attached to the [formed] wrapped bundle or package formed.

Please amend page 2, second full paragraph, to read as follows:

Although the above-described arrangements have been found useful, [W]when the film is torn, ~~due to~~ however, because of the effect of the elastic return of the material, the flap upstream of the cut tends to return into the assembly[.]. As a result, the flap often ~~becom[ing]es~~ disengaged from the [conveyance] rollers ~~and obliging~~ necessitating that the operator to flap be manually re-positioned [it] on the[se] rollers before resuming operations

[with] for the next wrapping cycle. This circumstance is has been found not only bothersome for the operator inconvenient and annoying, but also causes substantial loss[es] of time and, therefore, considerable reduction in of the productivity of the during wrapping/packing operations.

Please amend from after the second full paragraph on page 2 to before the first full paragraph on page 3 to read as follows:

Furthermore, when the automatic cutt[ing]er is means are used, in the procedure described above, the evolution it has been found that development of the cut, and its final position in relation relative to the length of film that has been pulled out of from the assembly, cannot be accurately controlled. Especially in the critical circumstances of the angle at which the film leaves the assembly and the tension at which it does so, due to the Because a substantial portion of film that freely extends freely downstream of the [constraint] point where the film is restrained, there will be formed a tail of film is usually formed that, upon completion of the cut, will dangle from the wrapped/packed bundle in an awkward and tedious [irksome] fashion from the packed goods. Tail formation also results from the critical angles at which, and the tensions under which, the film often leaves the assembly.

Please amend page 3, first full paragraph, to read as follows:

OBJECTS AND SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a stretch film unrolling and pre-stretching assembly having an automatic film cutter that allows relatively continuous packing operations without requiring in order to avoid the worker having to adjustment of the assembly or otherwise necessitating a worker's interven[e]tion at the end of the cutting operation to insure suitable re-positioning of the film for the next wrapping cycle.

Please amend page 3, second full paragraph, to read as follows:

Furthermore, it is an Another object of the present invention is to provide a[n] stretch film unrolling and pre-stretching assembly of the aforementioned type that will make it possible to obtain allows more accurate control of the final position of the cut in the film, thereby avoiding in particular the formation of tails of film on the [packed] goods or products being wrapped/packed.

Please amend page 3, third full paragraph, to read as follows:

According to one aspect of the present invention, [The] an assembly is provided for unrolling and pre-stretching stretch film in accordance with the present invention, the assembly compris[es]ing a first member control means for controlling [the] forward

movement of the film [that] as it is [being] unrolled from a spool, [and] a cutt[ing]er means for lacerating said film, arranged downstream of [said] the control [means] member, the assembly being characterized in that, downstream of said cutting means, it comprises means for lacerating the film, and a second member, arranged generally downstream of the cutter, for preventing [the] return of the film in [the] a direction opposite to the one that in which [it] the film leaves the assembly.

Please amend page 3, fourth full paragraph, to read as follows:

Preferably, these return preventing means comprise two rubber-covered rollers rotating in opposite directions and in contact with each other in such a way as to allow the film to pass between them, the rollers being provided with means to prevent their rotation in the direction opposite to the one that corresponds to the film leaving the assembly.

Please amend from after the fourth full paragraph on page 3 to before the first full paragraph on page 4 to read as follows:

In accordance with another aspect of the present invention, [The] a method is provided for cutting [the] stretch film fed by and from an assembly for unrolling and pre-stretching the film toward goods/products to be wrapped. The assembly includes a first member for controlling the unwinding of the film from a spool and a cutter for selectively severing the film. The method comprises the steps of initially bringing [envisages] the film first being brought to a halt by [the] locking the control [means] member, and [the] simulta-

neously operati[on]ng [of] the cutt[ing]er so as means in order to produce a lacerat[ion]e [of] the [material] film. Upon completion of the cut - due to stretching of the film following the wrapping movement, the control member is unlocked so as to permit the lacerated portion of the film to pass generally downstream of a member for preventing the return of the film in the direction opposite the one in which it leaves the assembly, the film then being brought to a halt by the control member in order to complete the cut. According to the invention, rather than proceeding right away with the cutting of the film by letting the laceration degenerate, the control means are released in order to permit the laceration zone to pass downstream of the return preventing means. Only at this point is the film brought to a halt again and the cut completed. In this way, there is a point of constraint of the film is restrained at a point immediately upstream of the cutting zone, at the same time, at the outlet from the assembly, with better control of the final position of the cut.

Please amend page 5, third full paragraph (which was originally one paragraph but was amended subsequently to be the two paragraphs below) to read as follows:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings and, more particularly, to FIGS. 1 - 4, there is shown generally a specific, illustrative assembly for automatically unrolling and cutting stretch film, in accordance with various aspects of the present invention. According to one embodiment illustrated throughout this disclosure, a stretch film unrolling and pre-stretching assembly is provided, in accordance with the invention, as part of a conventional packaging machine. Functional and structural aspects of such packaging machines are considered

known by those skilled in the art and further description is believed unnecessary for illustration of the present invention.

For purposes of the present invention as set forth herein, the machine preferably includes a frame 1, comprising a lower plate 1a and a top casing 1b at a selected distance from one another, and ~~rubber-covered~~ rollers 2, e.g., rubber-covered, extending between them for controlling forward movement of the film. The rollers are operated through transmission 3 by a motor reducer 4, shown by broken lines in FIG. 6, accommodated within casing 1b. Also [noteworthy] illustrated are idle conveyance rollers 6 arranged generally downstream of the rubber-covered rollers, and a support 7 for a spool of film 8, best seen in FIG. 6, where a film path 8a is [also] additionally shown, unwound from spool 8, across control rollers 2 and idle conveyance rollers 6 to exit the assembly.

Please amend from after the third full paragraph on page 5 to before the first full paragraph on page 6 to read as follows:

~~According to the invention, and Referring now [also] further to [figures] FIGS. 1 [to]-3, downstream of the conveyance rollers 6 and in [the] a zone where the film leaves the unrolling and pre-stretching assembly, a frame 1 is provided which supports a film cutting device, indicated as a whole at the reference number 9[,] that likewise extends between [the] lower plate 1a and [the] top casing 1b. Device 9, in [its] turn, comprises a frame 10 [with] having a lower plate 10a and a top casing 10b, between which there extend two rubber-covered rollers 11 extend. The rollers are preferably arranged in contact with [each] one another in such a way so as to engage [with] and allow the film, letting it to pass between~~

them. The forward motion of the film leaving the assembly [obviously] causes the [two] [small] rollers, e.g., two rollers that are relatively small in size, to rotate in opposite directions, [as] indicated by [the] arrows F in [figure] FIG. 1.

Please amend page 6, first full paragraph, to read as follows:

The [R]rollers [11] preferably include a system for preventing their rotation in a direction opposite to that which corresponds to the film leaving the assembly. This effect [can] may be obtained achieved with any known system, for example, by mounting the [small] rollers on their respective fixed axes of rotation using, for instance, drawn cup roller clutches 18, shown in dashed lines in FIG. 1. Upstream of rollers 11, and inside top casing 10b of frame 10, ~~there is housed~~ a film cutting mechanism 12 is housed as shown, for example, in FIGS. 2, 3a and 3b ~~and identified generally by reference number 12.~~ Mechanism 12 desirably comprises a blade 14 supported by an arm 13 hinged in an intermediate position so as to undergo an angular displacement in a plane [which] cross[es]ing the plane in which the film lies as it leaves the assembly.

Please amend from after the first full paragraph on page 6 to before the first full paragraph on page 7 to read as follows:

More [precisely] specifically, a blade 14 projects transversely from one end of arm 13, i.e., the lower end in the configuration ~~of the illustrated example shown,~~ ~~in such a way~~ so as to partially project from or outside of casing 10b, the blade passing through a slot 15

formed in the casing, so that it ~~can lacerate~~ may cut the film following a selected rotation of arm 13 towards a cutting position (see [figure] FIG. 3a). On the other hand, [the] rotation of the arm [13] in [the] ~~an~~ opposite direction, towards a resting position (~~see figure shown in~~ FIG. 3b), causes blade 14 to return inside the case, leaving the film free to move forward ~~towards rollers 11~~, without interference, ~~towards rollers 11~~.

Please amend page 7, first full paragraph, to read as follows:

The cutting mechanism also [comprises] includes an actuator means to ~~for effecting~~ rotat[e]ion of arm 13. In the [illustrated] embodiment illustrated, ~~these~~ means the actuator comprises a pair of linear electro-magnetic actuators 16 [and], 17 [that] acting, respectively, on [the] ~~an~~ upper end of arm 13, opposite the ~~end~~ that ~~which~~ bears blade 14, and [on] ~~at~~ a point ~~relatively~~ intermediate between the blade and the hinge point of the arm. As ~~can~~ clearly be best seen from figures in FIGS. 3a and 3b, [the] ~~an~~ operative or cutting position of the arm [13] is [determined] defined generally by a backward configuration of [the] upper actuator 16 and a forward configuration of [the] lower actuator 17. ~~On the other hand, the A stowed or resting position, on the other hand, is determined by~~ corresponds [to] generally with a forward configuration of the upper actuator [16] and a backward configuration of the lower actuator [17]. Actuators 16 and 17 are desirably controlled by [the] ~~an~~ electronic control system of the packaging machine, e.g., conventional, with which the present invention may be used. It is preferred that such, ~~which~~ system [obviously] also control[s] [the] operation of motor reducer 4 and therefore of, ~~thus,~~ rollers 2.

Please amend from after the first full paragraph on page 7 to before the first full paragraph on page 8 to read as follows:

Generally speaking, As already mentioned the procedure for wrapping [the] stretch film [around] about the [load] bundle to be wrapped/packed using [with] the assembly in accordance with the present invention is carried out may be accomplished in a conventional manner due to the effect of [the] mutual rotation between the assembly and the [item] bundle being wrapped/packed. During [its] a normal feeding operation, the film leaving the assembly passes between the two rubber-covered rollers 11, such rollers rotating in opposite directions, and arm 13 being [kept] maintained in [its] a resting position. [When] As a the cycle of wrapping cycle for a bundle the load approaches its comes to an end, [control] rollers 2 are locked for a [certain] selected time [that], which may vary according to depending on the circumstances, [thus] thereby bringing [the] forward movement of the film to a halt. At the same time, arm 13 is brought into its cutting position, so that blade 14 causes a perforation of the film, after which [it] the blade is immediately brought back into returned to its resting position.

Please amend page 8, first full paragraph, to read as follows:

According to the invention Thereafter, [control] rollers 2 are [then] unlocked to [make] cause the film to move forward, thus permitting the film's perforation zone to get out move downstream of and away from rollers 11. At this point, once more after another selected interval of time, that may be arbitrarily determined, rollers 2 are [again] locked once

more, thereby again bringing the film to a [new] halt. Since the relative movement between the assembly and the load to be wrapped continues, the film downstream of the point at which it is [con]restrained becomes [greatly] considerably stretched. The perforation will thus rapidly [degenerate] develop into a relatively complete transverse cut. The wrapping cycle may then terminate, with. Since rollers 11 [that,] are not [being] able rotate in [the] a direction opposite the one in which the film leaves the assembly, they prevent the flap of film from shrinking into the interior of the assembly due to the elastic return effect following the cut. The flap is, therefore, readily and securely and readily accessible for the operator to commence the next wrapping cycle.

Please insert the following new paragraph after the first full paragraph on page 8 to read as follows:

-- Hence, rather than proceeding immediately with cutting the film and allowing the lacerated portion to drop, the control member is released to permit the lacerated portion to pass downstream of a second member for preventing return of the film. Generally speaking, and preferably, it is only at this point that the film is again brought to a halt and the cut completed. In this manner, the film is restrained at a point immediately upstream of the cutting zone, while being restrained simultaneously at a point in proximity to the outlet of the assembly, thereby enhancing control of the final position of the cut. --

Please amend from after the first full paragraph on page 8 to before the first full paragraph on page 9 to read as follows:

Apart from this aspect, which clearly resolves in a fully satisfactory manner the problematics explained in the introductory part, the assembly and the cutting procedure realized in accordance with In addition to overcoming the drawbacks of conventional assemblies for unrolling and cutting stretch film, the present invention obtain the important result of notably achieves highly effective control of the [evolution] development of the cut, this in contrast with what happens in the prior art. Indeed [fact], rollers 11 provide the film with an add[itional]ed point of [con]straint of the film in the outlet zone, preventing the cut from assuming an [unforeseeable] unpredictable position, in general, and, more particularly, giving rise to formation of a long tail of film dangling from the wrapped products/goods, in particular. Nor should one overlook the Moreover, the present invention advantageously enhances accident prevention and safety of the cutting system for the purposes of accident prevention, since rollers 11 prevent access being gained from the outside to the zone in which blade 14 operates. [Lastly] Finally, as the [whole] entire film cutting device 9, being is a single body distinct from the rest of the assembly, it is particularly beneficial in being can be easily removed [there]from the assembly for maintenance and/or repair whenever it has to be checked and/or maintained.

Please amend page 9, first full paragraph, to read as follows:

As already noted Furthermore, the assembly in accordance with according to the present invention can be readily used in any semi-automatic machine for wrapping pallets or various products. The assembly itself, apart from the improved system according to the invention, may have overall characteristics different from those of the illustrated

embodiment:

Although the present invention has been shown and described as having In particular, the control rollers 2 with [the] associated motor reducer 4, those skilled in the art will appreciate that other control arrangements may be utilized, giving consideration to the purpose for which the invention is intended. For instance, rollers 2 and motor reducer 4 could be replaced by an alternative control [means] system in accordance with what is [already] known to prior in the art. Constructional solutions Similarly, constructions different from th[e]at one here shown by way of example described above could [also] be used [for] to operat[ing]e the blade (for example, a pneumatic or purely mechanical system[s]), though the [shown] solution disclosed is considered particularly advantageous on [account] in view of its structural and functional simplicity. In particular More specifically, the characteristic double movement of arm 13 by means of the two actuators 16 [and], 17 assures a insures precise, safe, and reliable arm movement.

Please amend from after the first full paragraph on page 9 through to the end of the text on page 10 to read as follows:

Other variants and/or modifications can be brought to the stretch film unrolling and pre-stretching assembly with improved system for automatically cutting the film and to the cutting procedure for use therewith in accordance with the present invention without thereby departing from the scope of the invention itself.